

Shipping Charges

High School
Math
Performance Task

by

Cheryl Lightner
MAP Senior Leader

Central Regional MAP Center

Shipping Charges

Purpose: This performance task will assess the student's ability to take real data, graph the data, and draw a logical and appropriate conclusion about the data. The data describes two types of relationships: linear functions and step functions. The students will develop a presentation which includes graphs and a proposal which states reasoning and gives support for a recommendation.

Show-Me Standards Addressed:

Knowledge: M1, M4, M6

Performance: 1.8, 2.1 ,3.5, 4.1

Grade Level Range: High School Level

Subject Area: Math

Materials and Resources Needed: pencil, graph paper, word processor, and a graphing utility program (both optional), Student Performance Task Packet (including the Student Prompt, the Response Sheets, and the Scoring Guides).

Time Needed for Task: Three 50 minute periods

Instructions for Administration: Provide students with a Student Performance Task Packet. Make sure they understand the directions within the student prompt. Tell students they may use a graphing utility program to complete the graphs or may construct their graphs themselves on the Student Response Sheets. They will need to write their presentation on the sheet provided.

Pre-assessment Instructions: Students will have to have the prerequisite knowledge of graphing linear equations and step functions before attempting this task. You may choose to have students work on this assignment outside of class. In this case, allow students a week to complete.

Shipping Charges: Student Prompt

Your company has three firms that it does business with on a regular basis. You can purchase the same items from all three companies. The items are about the same price from each firm. The companies have changed their shipping charges due to a recent strike by UPS workers. It is your job to determine which firm has the cheapest shipping and handling rates. Use the Shipping Charges Reference Sheet to find each company's present rates.

You are to make a presentation to the Board of Directors of your company in two weeks. You will have to convince them which firm your company should continue to do business with. Your presentation should include graphs or charts illustrating each firm's shipping charges for \$50, \$125, \$500, and \$1000 orders. A written summary is required and it must provide reasons and support for your recommendation.

Shipping Charges Reference Sheet

Company A

Add 10% for shipping and warranty on orders up to \$500.

Add 8% for shipping and warranty on orders over \$500.

Next day delivery (if available) add \$12 per item.

Foreign Orders

Orders outside the US or Canada must be accompanied by payment in US dollars. For Air Delivery (non APO or FPO), please prepay a 15% shipping and handling fee plus \$12 per item ordered.

Company B

Order Total	Add for Shipping
up to \$10.00	\$3.85
\$10.01-\$25.00	\$5.50
\$25.01-\$40.00	\$7.75
\$40.01-\$60.00	\$11.00
\$60.01-\$75.00	\$13.00
\$75.01-\$100.00	\$16.50
\$100.01-\$125.00	\$20.00
\$125.01-\$175.00	\$27.00
\$175.00-\$250.00	\$37.00
\$250.01-\$325.00	\$47.00
\$325.01-\$400.00	\$57.00
\$400.01-\$500.00	\$67.00
\$500.01 and Over	13%

Company C

DELIVERY Most orders are shipped to arrive in the continental USA in 2-6 business days.

POSTAGE & HANDLING CHARGES

Up to \$10.00	\$4.50
\$10.01-\$20.00	\$5.75
\$20.01-\$30.00	\$6.85
\$30.01-\$40.00	\$7.85
\$40.01-\$50.00	\$8.95
\$50.01-\$60.00	\$9.95
\$60.01-\$75.00	\$10.85
\$75.01-\$90.00	\$12.50
\$90.01-\$250.00	\$13.95

\$250.01 - \$500 add 11% for postage and handling

\$500.01 and up add 10% for postage and handling

Shipping Charges: Graphs/Charts

[illegible][illegible]

Attach charts or graphs to the back of this page.

Graphs: Scoring Guide

Score each graph separately.

Exemplary: 4

The shipping rates for each company are graphed accurately using an appropriate scale, the axes are labeled correctly, the title is present, and the graph is presented neatly.

Proficient: 3

The shipping rates for each company are, for the most part, graphed correctly, the axes are labeled correctly, the title is present, and the graph can be understood.

Emergent: 2

The shipping rates for each company are graphed with some significant errors. The scales may not be continued sufficiently to address all fluctuations in the graph. The axes may be reversed. However, there is some demonstration of how to graph the data. Labels are omitted on one or both axes and there may or may not be a title.

Attempted: 1

The shipping rates for each company are partially graphed. Scales may or may not be labeled. The graph is attempted and but contains significant errors.

Off task or No Attempt: 0

Students receiving a 2, 1, or 0 will need to revise work to a proficient level.

Presentation: Scoring Guide

Exemplary: 4

The presentation clearly states and supports the recommendation to the board. It includes accurate calculations for \$50, \$125, \$500, and \$1000 orders. This presentation also takes into consideration having overnight deliveries as well as regular deliveries.

Proficient: 3

The presentation clearly states and supports the recommendation to the board. It includes accurate calculations for \$50, \$125, \$500, and \$1000 orders. This presentation may or may not take into consideration having overnight deliveries as well as regular deliveries. The presentation has some minor flaws but overall demonstrates the understanding of the problem and how to reach an appropriate conclusion.

Emergent: 2

The presentation does not clearly state and support the proposed recommendation . There may be some flaws in calculations for \$50, \$125, \$500, and \$1000 orders.

Attempted: 1

The presentation does not state and /or support a proposal to the board. There are major flaws in the calculations for \$50, \$125, \$500, and \$1000 orders. Some of the calculations may not be stated or shown in the presentation.

No attempt or Off Task: 0

Students receiving a 2, 1, or 0 will need to revise work to a proficient level.